**SQL Introduction – 4**

**DML (Data Manipulation Language)**

## The SQL SELECT Statement

The SELECT statement is used to select data from a database.

The result is stored in a result table, called the result-set.

### SQL SELECT Syntax

SELECT column\_name,column\_name
FROM table\_name;

and

SELECT \* FROM table\_name;

## Demo Database

In this tutorial we will use the well-known Northwind sample database.

Below is a selection from the "Customers" table:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CustomerID** | **CustomerName** | **ContactName** | **Address** | **City** | **PostalCode** | **Country** |
| 1 | Alfreds Futterkiste | Maria Anders | Obere Str. 57 | Berlin | 12209 | Germany |
| 2 | Ana Trujillo Emparedados y helados | Ana Trujillo | Avda. de la Constitución 2222 | México D.F. | 05021 | Mexico |
| 3 | Antonio Moreno Taquería | Antonio Moreno | Mataderos 2312 | México D.F. | 05023 | Mexico |
| 4 | Around the Horn | Thomas Hardy | 120 Hanover Sq. | London | WA1 1DP | UK |
| 5 | Berglunds snabbköp | Christina Berglund | Berguvsvägen 8 | Luleå | S-958 22 | Sweden |

## SELECT Column Example

The following SQL statement selects the "CustomerName" and "City" columns from the "Customers" table:

## Example

SELECT CustomerName,City FROM Customers;

Number of Records: 91

|  |  |
| --- | --- |
| **CustomerName** | **City** |
| Alfreds Futterkiste | Berlin |
| Ana Trujillo Emparedados y helados | México D.F. |
| Antonio Moreno Taquería | México D.F. |
| Around the Horn | London |
| Berglunds snabbköp | Luleå |
| Blauer See Delikatessen | Mannheim |
| Blondel père et fils | Strasbourg |
| Bólido Comidas preparadas | Madrid |
| Bon app' | Marseille |
| Bottom-Dollar Marketse | Tsawassen |
| B's Beverages | London |
| Cactus Comidas para llevar | Buenos Aires |
| Centro comercial Moctezuma | México D.F. |

SELECT \* Example

The following SQL statement selects all the columns from the "Customers" table:

Example

SELECT \* FROM Customers;

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CustomerID** | **CustomerName** | **ContactName** | **Address** | **City** | **PostalCode** | **Country** |
| 1 | Alfreds Futterkiste | Maria Anders | Obere Str. 57 | Berlin | 12209 | Germany |
| 2 | Ana Trujillo Emparedados y helados | Ana Trujillo | Avda. de la Constitución 2222 | México D.F. | 05021 | Mexico |
| 3 | Antonio Moreno Taquería | Antonio Moreno | Mataderos 2312 | México D.F. | 05023 | Mexico |
| 4 | Around the Horn | Thomas Hardy | 120 Hanover Sq. | London | WA1 1DP | UK |
| 5 | Berglunds snabbköp | Christina Berglund | Berguvsvägen 8 | Luleå | S-958 22 | Sweden |
| 6 | Blauer See Delikatessen | Hanna Moos | Forsterstr. 57 | Mannheim | 68306 | Germany |
| 7 | Blondel père et fils | Frédérique Citeaux | 24, place Kléber | Strasbourg | 67000 | France |
| 8 | Bólido Comidas preparadas | Martín Sommer | C/ Araquil, 67 | Madrid | 28023 | Spain |
| 9 | Bon app' | Laurence Lebihans | 12, rue des Bouchers | Marseille | 13008 | France |
| 10 | Bottom-Dollar Marketse | Elizabeth Lincoln | 23 Tsawassen Blvd. | Tsawassen | T2F 8M4 | Canada |
| 11 | B's Beverages | Victoria Ashworth | Fauntleroy Circus | London | EC2 5NT | UK |

The SELECT DISTINCT statement is used to return only distinct (different) values.

The SQL SELECT DISTINCT Statement

In a table, a column may contain many duplicate values; and sometimes you only want to list the different (distinct) values.

The DISTINCT keyword can be used to return only distinct (different) values.

SQL SELECT DISTINCT Syntax

SELECT DISTINCT *column\_name*,*column\_name*
FROM *table\_name*;

Demo Database

In this tutorial we will use the well-known Northwind sample database.

Below is a selection from the "Customers" table:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CustomerID** | **CustomerName** | **ContactName** | **Address** | **City** | **PostalCode** | **Country** |
| 1 | Alfreds Futterkiste | Maria Anders | Obere Str. 57 | Berlin | 12209 | Germany |
| 2 | Ana Trujillo Emparedados y helados | Ana Trujillo | Avda. de la Constitución 2222 | México D.F. | 05021 | Mexico |
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SELECT DISTINCT Example

The following SQL statement selects only the distinct values from the "City" columns from the "Customers" table:

Example

SELECT DISTINCT City FROM Customers;

The SQL WHERE Clause

The WHERE clause is used to extract only those records that fulfill a specified criterion.

SQL WHERE Syntax

SELECT *column\_name*,*column\_name*
FROM *table\_name*
WHERE *column\_name operator value*;

Demo Database

In this tutorial we will use the well-known Northwind sample database.

Below is a selection from the "Customers" table:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CustomerID** | **CustomerName** | **ContactName** | **Address** | **City** | **PostalCode** | **Country** |
| 1 | Alfreds Futterkiste | Maria Anders | Obere Str. 57 | Berlin | 12209 | Germany |
| 2 | Ana Trujillo Emparedados y helados | Ana Trujillo | Avda. de la Constitución 2222 | México D.F. | 05021 | Mexico |
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WHERE Clause Example

The following SQL statement selects all the customers from the country "Mexico", in the "Customers" table:

Example

SELECT \* FROM Customers
WHERE Country='Mexico';

Text Fields vs. Numeric Fields

SQL requires single quotes around text values (most database systems will also allow double quotes).

However, numeric fields should not be enclosed in quotes:

Example

SELECT \* FROM Customers
WHERE CustomerID=1;